

**Section 901. CEMENT AND LIME**

**901.01 General Requirements.** Facilities shall be provided for sampling and inspecting of cement at the mill, the distribution point, and at the work site. The cement shall be stored in such a manner as to permit easy access for proper inspection and identification of each shipment.

Portland cement shall not develop false set when tested by the mortar method of ASTM C 359. False set will be considered to have occurred if penetration is less than 5 mm at 5-, 8-, or 11-minute intervals. These limits shall apply only in the event of difficulties in placing and finishing the concrete due to premature stiffening.

Prior to placement of concrete, the Contractor shall furnish the Engineer with a copy of the Certification of Quality of Cement, as provided by the producer.

**901.02 Testing.** Testing will be done according to the applicable ASTM specification, as modified.

**901.03 Portland Cement.**

- A. **Type I, IA, III, and IIIA Cements.** Conform to ASTM C 150. The requirements for Gillmore or Vicat setting time and compressive strength for 7 and 28 days apply.
- B. **Type IS, I(SM), IS-A, and I(SM)-A Blast-Furnace Slag Cements.** Conform to ASTM C 595.
- C. **Type IP, I(PM), IP-A, and I(PM)-A Pozzolan Cements.** Conform to ASTM C 595.
- D. **White Cement.** Conform to ASTM C 150, Type I except not more than 0.55 percent of ferric oxide ( $\text{Fe}_2\text{O}_3$ ) by weight is permitted. The requirements for Gillmore or Vicat setting time and compressive strength for 7 and 28 days apply.

**901.04 Masonry Cement.** Conform to ASTM C 91, Type N, S, or M.

**901.05 Hydrated Lime.** Conform to ASTM C 207, Type S or SA.

**901.06 Ground Granulated Blast-Furnace Slag.** Conform to ASTM C 989, Grade 100, minimum. Use only as a blending material with Type I or Type IA Portland cement.

**901.07 Fly Ash.** Conform to ASTM C 618, Class F or Class C, except the loss on ignition shall not exceed 5.0 percent and the air-entraining admixture uniformity requirement in Table 2A on Supplementary Optional Physical Requirements shall apply.

**901.08 Silica Fume, Dry-Densified.** Conform to ASTM C 1240. Use only as a blending material with Type I or Type IA Portland cement.